

AMENDMENTS TO THE CLAIMS

Claims 1-11. Canceled.

12. (Currently amended) A method of determining a ~~concavity or a convexity of line pattern or [[and]] space~~ between adjacent line patterns arranged as a plurality of line patterns on ~~[[of]] a sample, the line and space patterns being arranged alternately on the sample,~~ the method comprising the steps of:

scanning a portion including an edge of a [[the]] line and space pattern[[s]] on the sample with a charged particle beam;

~~forming, based on detected charged particles emitted from each of the scanned portions of the sample, a profile waveform of an intensity of the charged particles;~~

forming a derivative waveform based on a of said profile waveform formed by detecting charged particles emitted from the scanned portion of the sample;

acquiring a first distance between a top and a foot portion of a first peak of the derivative waveform, and a second distance between a top and a foot portion of a second peak of the derivative waveform;

judging the longer of the first and second distances to correspond to a line pattern, or the shorter of the first and second distances to correspond to a space between the line patterns, based on a comparison between the first distance and the second distance;

adjusting, based on a judgment result of line pattern or space between adjacent line patterns from the judging step, a position of an image in such a manner that a position of a portion of the image to be measured is brought to a position that has been set for measuring a pattern size; and

measuring the portion of the image to be measured that has been position adjusted.

~~comparing, referring to first and second peaks, which are adjacent positive and negative peaks of said derivative waveform that are generated at positions corresponding to opposite sides of~~

~~a single peak of said profile waveform, a first distance between a first zero point of the derivative waveform and a corresponding peak position of said first peak with a second distance between a peak position of said second peak and a corresponding second zero point; and~~

~~determining, based on the comparison of the first and second distances and referring to said first and second peaks of said derivative waveform, regions of the sample correspondingly adjacent to regions of said first and second peaks of the derivative waveform to be the space pattern and the line pattern, respectively, when said second distance is longer than said first distance, and determining regions of the sample correspondingly adjacent to regions of said first and second peaks of the derivative waveform to be the line pattern and the space pattern, respectively, when said first distance is longer than said second distance.~~

13. (Currently amended) The method of determining a line pattern or a space between adjacent line patterns arranged in plural line patterns on a sample concavity or a convexity of line and space patterns of a sample according to claim 12, wherein widths of the line pattern and the space between the line patterns are substantially equal.

14. (Currently amended) A method of determining a ~~concavity or a convexity of line pattern or a~~ [[and]] space between adjacent line patterns arranged as a plurality of line patterns on ~~[[of]]~~ a sample, ~~the line and space patterns being arranged alternately on the sample;~~ the method comprising the steps of:

scanning a portion including an edge of a ~~[[the]] line and space pattern~~ [[s]] on the sample including a plurality of convex and/or concave patterns formed thereon with a charged particle beam;

~~forming, based on detected charged particles emitted from each of the scanned portions of the sample, a profile waveform of an intensity of the charged particles;~~

forming a derivative waveform based on a ~~of said profile waveform~~ formed by detecting charged particles emitted from the scanned portion of the sample;

acquiring a first distance between a top and a foot portion of a first peak of the derivative waveform, and a second distance between a top and a foot portion of a second peak of the derivative waveform;

judging the longer of the first and second distances to correspond to a line pattern, or the shorter of the first and second distances to correspond to a space between adjacent line patterns, based on a comparison between the first distance and the second distance;

adjusting, based on a judgment result of line pattern or space between adjacent line patterns from the judging step, a position of an image in such a manner that a position of a portion of the image to be measured is brought to a position that has been set for measuring a pattern size; and

measuring the portion of the image to be measured that has been position adjusted.

~~obtaining, referring to first and second peaks which are adjacent positive and negative peaks of said derivative waveform that are generated at positions corresponding to opposite sides of a single peak of said profile waveform, an evaluation value from each of said first and second peaks;~~

~~comparing the evaluation value obtained from said first peak with the evaluation value obtained from said second peak; and~~

~~determining, based on the comparison of the evaluation values and referring to said first and second peaks of said derivative waveform corresponding, regions of the sample correspondingly adjacent to regions of said first and second peaks of the derivative waveform to be the space pattern and the line pattern, respectively, when said evaluation value obtained from said second peak is larger than said evaluation value obtained from said first peak, and determining regions of the sample correspondingly adjacent to regions of said first and second peaks of the derivative waveform to be the line pattern and the space pattern, respectively, when said evaluation value obtained from said first peak is larger than said evaluation value obtained from said second peak.~~

15. (Currently amended) The method of determining a ~~concavity or a convexity~~ of line pattern or a ~~[[and]]~~ space between adjacent line patterns ~~[[of]]~~ on a sample according to claim 14, wherein each of the first and second distances ~~evaluation-value~~ corresponds to a distance (interval) between zero (flat line) and a peak position of one of a pair of positive and negative peaks of the derivative waveform, the pair of positive and negative peaks being generated in correspondence with left and right foot portions of a peak position of the profile ~~for each of the first and second peaks of said derivative waveform.~~

16. (Currently amended) The method of determining a ~~concavity or a convexity~~ of line pattern or a ~~[[and]]~~ space between adjacent line patterns ~~[[of]]~~ on a sample according to claim 14, wherein widths of the line patterns and the spaces between adjacent line patterns are substantially equal.

Claims 17-18. Canceled.

19. (New) The method of determining a line pattern or space between adjacent line patterns on a sample according to claim 12, wherein the adjustment of the position of the image is performed using a judgment result of line pattern or space for a pre-registered model image and the judgment result of line pattern or space between the line patterns from the judging step.

20. (New) The method of determining a line pattern or space between adjacent line patterns on a sample according to claim 14, wherein the adjustment of the position of the image is performed using a judgment result of line pattern or space for a pre-registered model image and the judgment result of line pattern or space between the line patterns from the judging step.